Things to Know, Understand, and Do
CP Chapter 3: A World of Particles

By the end of Chapter 3, you should

Know (how to)…
Summarize and state the 5 points of Dalton's atomic theory
Explain the exceptions to atomic theory based on current knowledge
Explain the cathode ray experiments by J.J. Thomson and how they led to the discovery of the electron
Explain Rutherford's Gold Foil experiment and how it discovered the nucleus
Calculate the numbers of protons, neutrons, and electrons in atoms and isotopes
The relative charges and masses of the nuclear particles
Designate different isotopes of elements by hyphen and symbol notations
Calculate average atomic mass for an element
Relate mass of elements to atoms by doing mole concept calculations
Find molar mass of an atom
Perform mole calculations
Identify α, β, and γ, the three major types of radiation in natural radioactive decay.
Write balanced equations for nuclear reactions.
Understand…
The early history of atomic theory
The work of Democritus, Aristotle, Dalton, Thomson, Rutherford
How chemistry progressed as *technology* progressed
The relationship of Dalton's Atomic theory with the LCM, LDC, and LMP
The atom is mostly empty space with a dense nucleus in the center
That an atom is composed of three particles
How to perform mole concept calculations properly
That one mole of anything is 6.022×10^{23} particles
THAT I MUST SHOW WORK IN EVERY CALCULATION OR I WILL NOT GET FULL CREDIT

Ch 3 Homework

Due the day before the test. Must be completed neatly. Use full sentences and/or show all work in calculations for full credit where applicable. This assignment may be passed in anytime before the test though. Students may also elect to pass in questions in smaller chunks during the course of our coverage of the chapter if that is more conducive to their learning style.

Read Chapter 3 (p 50-81)

Do the following problems:

pg 55 Q 1, 2, 4, 11
pg 60 Q 1, 2, 4, 5, 6
pg 64 Q 3, 5, 8
pg 76 Q 2, 3, 6, 7 (a + b), 8 (a + b)
pg 80 Q 3, 4